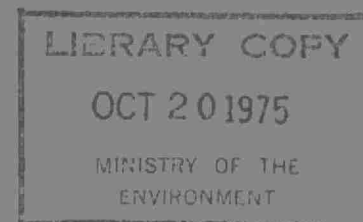


OPERATING SUMMARY

TOWN OF
MIDLAND

WATER POLLUTION CONTROL PLANT

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MINISTRY OF THE ENVIRONMENT



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7
4

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Ontario

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REGIONAL OPERATIONS
J. Barr

REGIONAL OPERATIONS DIVISION

DIRECTOR, CENTRAL REGION
P. Cockburn

MANAGER, UTILITY OPERATIONS
A. Thomas

MIDLAND
WATER POLLUTION CONTROL PLANT

operated for
THE TOWN OF MIDLAND
by the
MINISTRY OF THE ENVIRONMENT

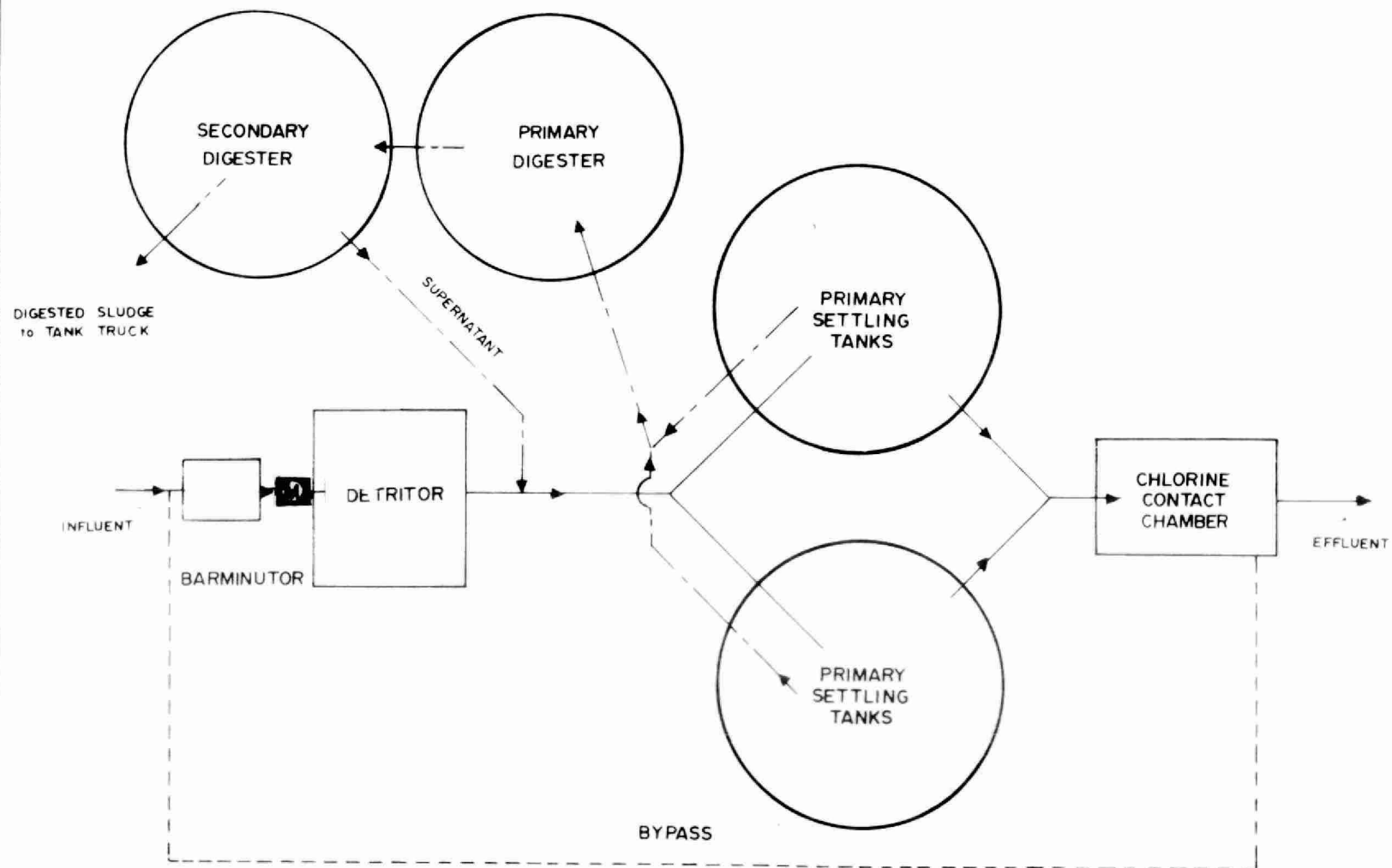
1974 ANNUAL OPERATING SUMMARY

prepared by
Plant Performance Unit
TECHNICAL SERVICES BRANCH
T. Cross, Director

CONTENTS

Title Page	1
Flow Diagram	4
Design Data	5
Operating Cost	6
Process Data	8

TOWN OF MIDLAND WPCP



DESIGN DATA

PROJECT Town of Midland WPCP

PROJECT NO. 2-0146-63

TREATMENT Primary

DESIGN FLOW 1.25 mgd

DESIGN POPULATION 12,500

BOD - Raw Sewage 225 mg/l
- Removal 40%

SS - Raw Sewage 300 mg/l
- Removal 60%

PRIMARY TREATMENT

Comminution

Type: Barminutor
Size: One Model C

Grit Removal

Type: Dorr Detritor
Size: One 12' x 12' x 16"
(1,200 gal)
Retention: 1.38 min

Primary Sedimentation

Type: Dorr
Size: Two 50' dia x 8' swd
195,000 gal)
Retention: 3.75 hours
Loading: Surface, 319 gal/ft²/day
Weir, 3970 gal/ft/day

CHLORINATION

Type: W & T, Type A711 (Auto)
Size: One 1000 lb/day

Chlorine Contact Chamber

Size: Irregular (16,200 gal)
Retention: 18.7 min

OUTFALL

615' of 24" pipe to Georgian Bay

SLUDGE HANDLING

Digestion System - Two Stage

Primary --

Type: Babcock-Wilson
Draft tube mixers (2)
Size: One 30' dia x 22' (15,600
cu ft or 97,200 gal)
Loading: 4.3 lb/cu ft/mo

Secondary --

Type: Fixed steel cover
Size: One 30' dia x 21½' (15,200
cu ft or 94,600 gal)
Total Loading: 2.2 lb/cu ft/mo

PUMPING STATIONS

#1 Pumping Station

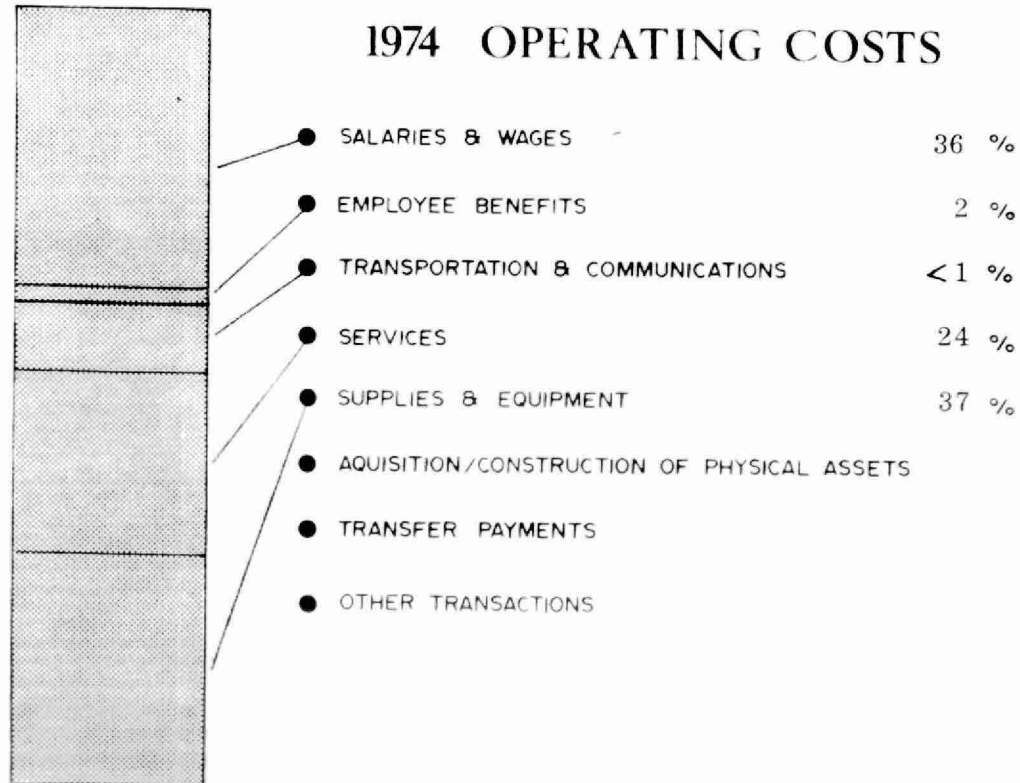
Type: Worthington
Size: Two 780 gpm @ 37' tdh
One 2600 gpm @ 60' tdh

#2 Pumping Station

Type: Flygt (submersible)
Size: Two 83 gpm @ 30' tdh

ANNUAL COSTS

1974 OPERATING COSTS



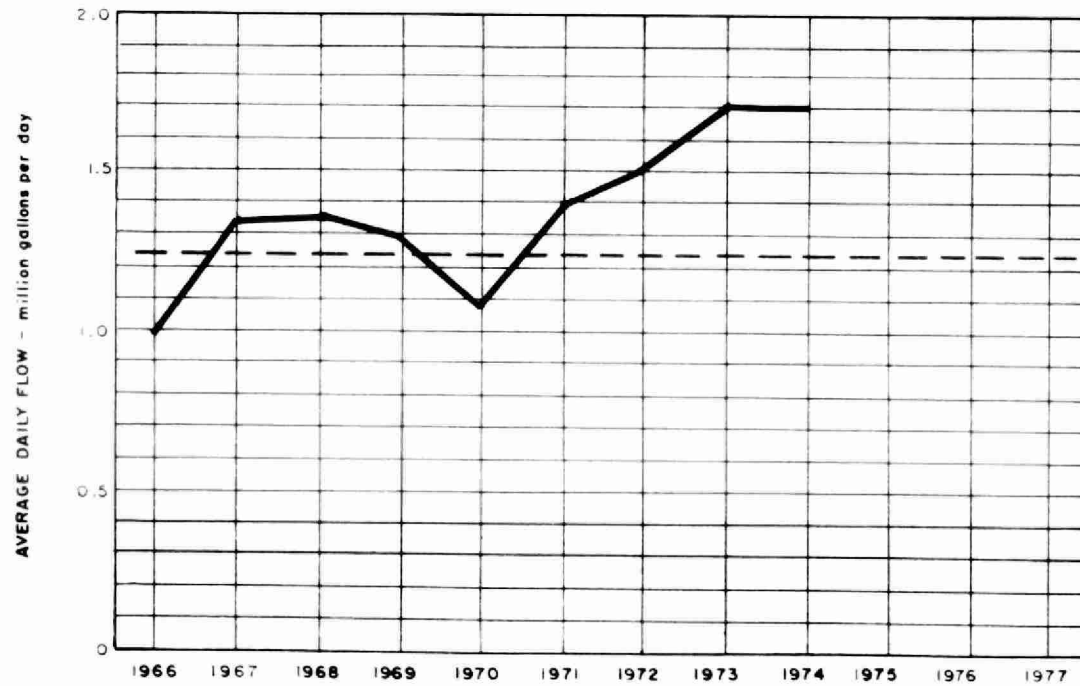
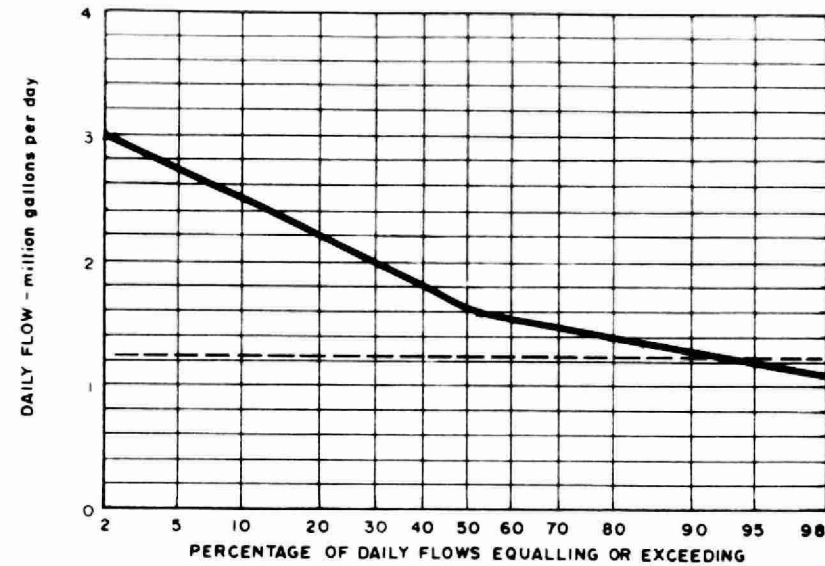
YEARLY OPERATING COSTS

YEAR	SEWAGE TREATED in million gallons	TOTAL OPERATING COSTS	UNIT COSTS	
			\$/M.G	¢/lb BOD
1969	488	35,187	72	26
1970	485	34,076	70	14
1971	511	37,863	74	24
1972	548	43,146	79	22
1973	608	44,145	73	14
1974	625	95,424	153	61

OPERATING EXPENDITURES

Regular Staff	\$ 25,854	\$
Casual (Unclassified) Staff	8,012	
TOTAL SALARIES AND WAGES		33,866
TOTAL EMPLOYEE BENEFITS		2,437
TOTAL TRANSPORTATION AND COMMUNICATIONS		897
Insurance	1,465	
Sludge Haulage	18,089	
Repairs and Maintenance	2,540	
Other Services	1,289	
TOTAL SERVICES		23,383
Machinery and Equipment	2,096	
Chemicals	17,151	
Utilities	12,210	
Other Supplies and Equipment	3,384	
TOTAL SUPPLIES AND EQUIPMENT		34,841
TOTAL AQUISITION/CONSTRUCTION OF PHYSICAL ASSETS		
TOTAL TRANSFER PAYMENTS		
OTHER TRANSACTIONS		
GRAND TOTAL	GRAND TOTAL	\$ 95,424

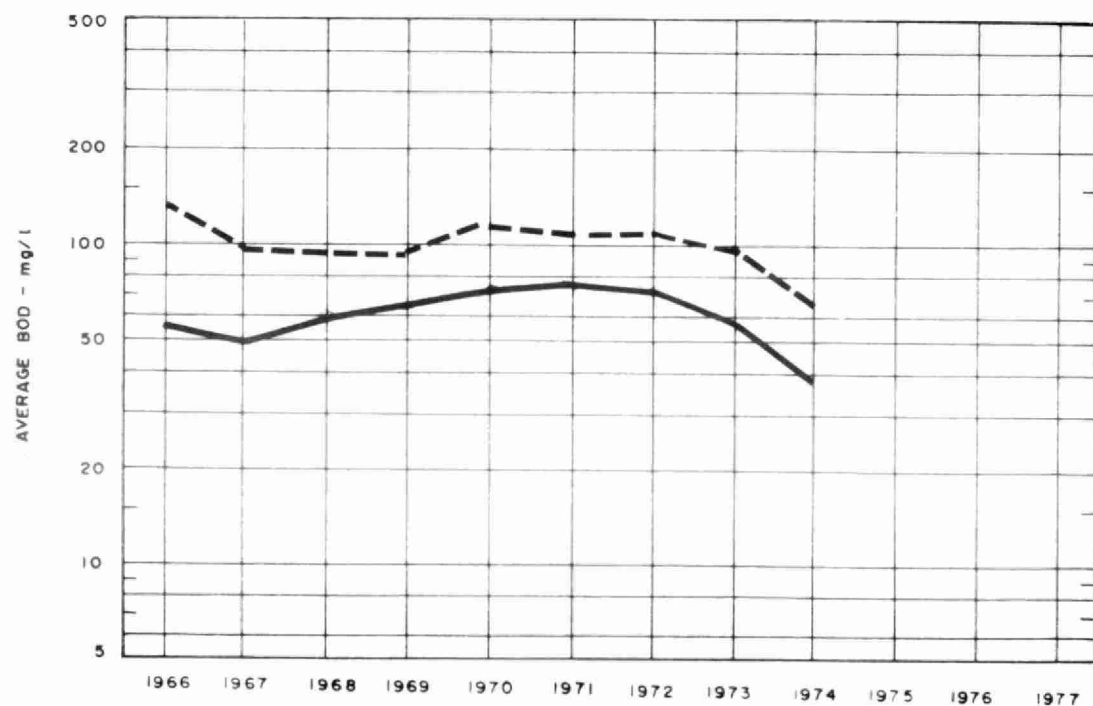
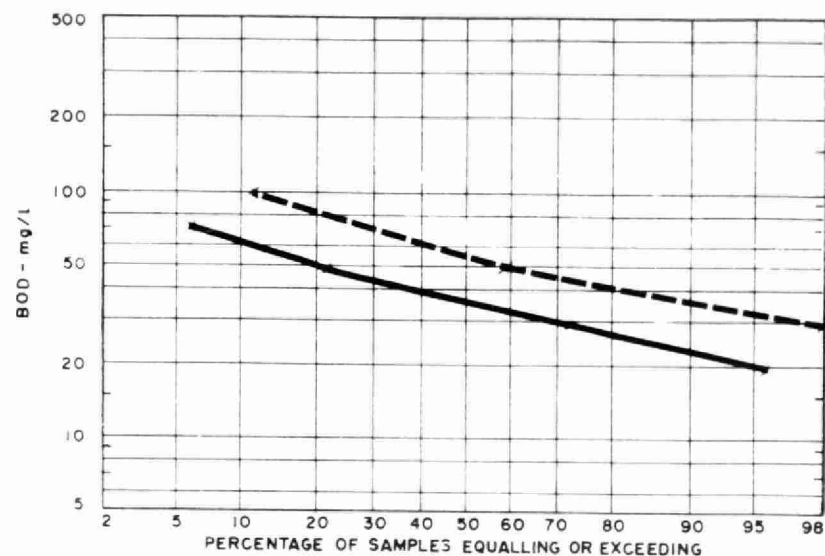
PROCESS DATA FLOWS



PLANT PERFORMANCE

MONTH	FLOWS			BIOCHEMICAL OXYGEN DEMAND				SUSPENDED SOLIDS				PHOSPHORUS	
	TOTAL FLOW	AVERAGE DAY	MAXIMUM DAY	INFLUENT	EFFLUENT	REDUCTION		INFLUENT	EFFLUENT	REDUCTION		INFLUENT	EFFLUENT
	million gallons	mil. gal	mgd	mg/l	mg/l	%	10 ³ pounds	mg/l	mg/l	%	10 ³ pounds	mg/l P	mg/l P
JAN	51.2	1.65	2.36	69	42	39	13.8	224	60	73	84.0	16.1	7.2
FEB	46.8	1.67	2.37	84	59	30	11.7	84	65	68	8.8	17.8	7.0
MAR	63.8	2.06	4.35	49	38	23	7.0	140	50	73	57.4	21.0	12.6
APR	66.6	2.22	3.86	49	26	47	15.3	117	28	76	59.3	10.3	2.1
MAY	57.4	1.85	2.56	45	30	33	8.6	138	39	72	56.8	10.4	4.4
JUNE	47.3	1.58	1.88	84	38	55	21.8	180	39	78	66.7	17.3	3.6
JULY	44.0	1.42	2.31	76	40	47	15.8	198	47	76	66.4	9.0	6.7
AUG	47.3	1.53	3.02	60	36	40	11.4	185	62	66	70.5	22.2	2.3
SEPT	46.6	1.56	2.25	48	29	40	8.9	193	54	72	64.8	19.0	4.5
OCT	46.7	1.51	1.91	62	34	45	13.1	121	33	73	41.1	12.6	5.3
NOV	47.2	1.57	2.10	43	32	26	5.1	173	53	69	56.6	12.0	3.7
DEC	43.1	1.39	1.80	70	45	36	10.8	197	58	71	59.9	8.3	6.4
TOTAL	625.3	-	-	-	-	-	156.3	-	-	-	712.8	-	-
AVG.	52.1	1.71	MAXIMUM 4.35	63	38	40	13.0	164	50	70	59.4	15.5	5.8
No. of Samples	-	-	-	73	72	-	-	73	71	-	-	72	71

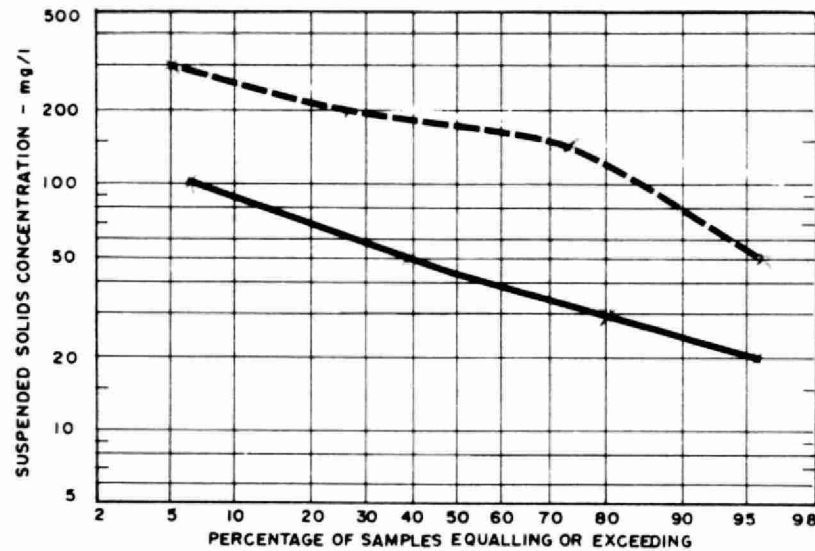
BIOCHEMICAL OXYGEN DEMAND



PLANT INFLUENT - - - - -

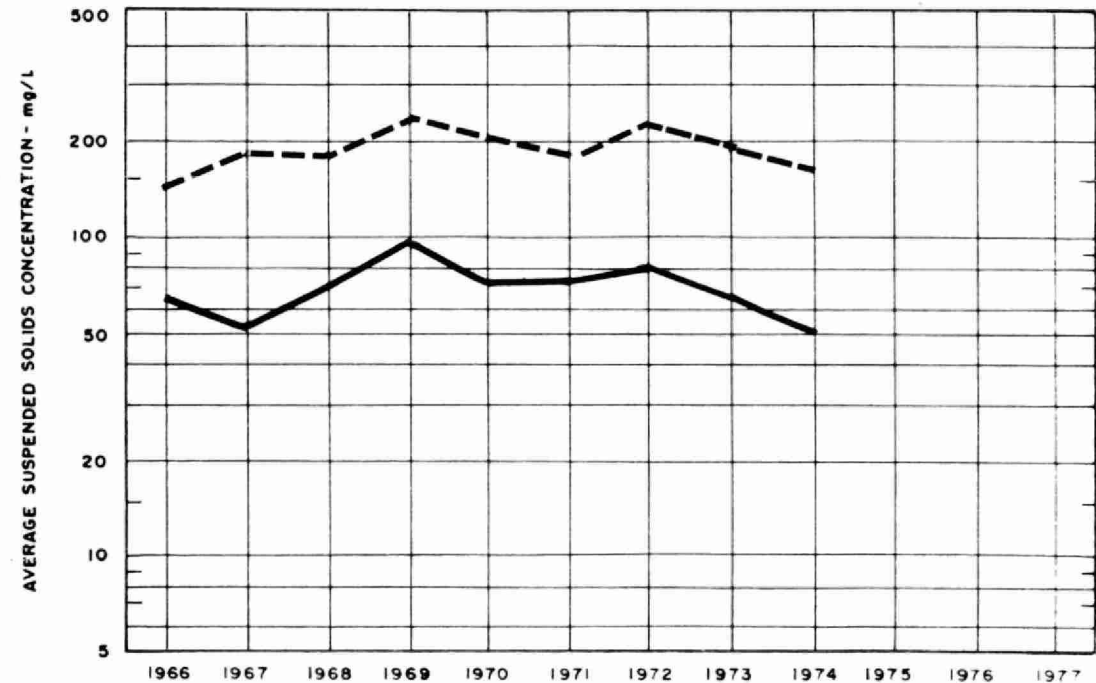
PLANT EFFLUENT —————

SUSPENDED SOLIDS

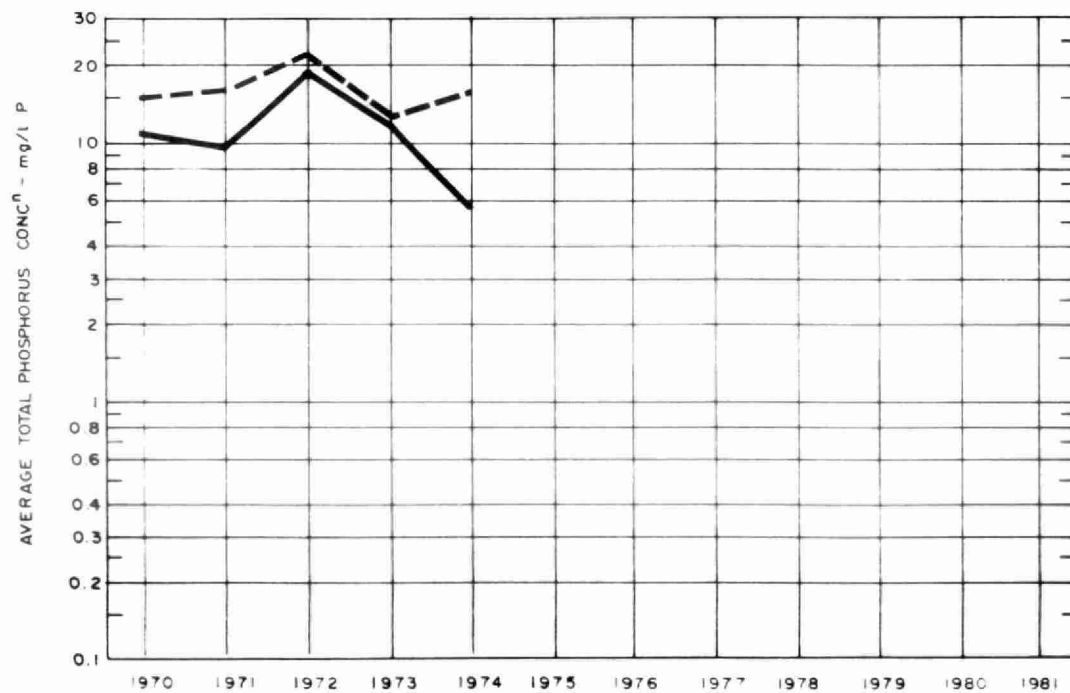
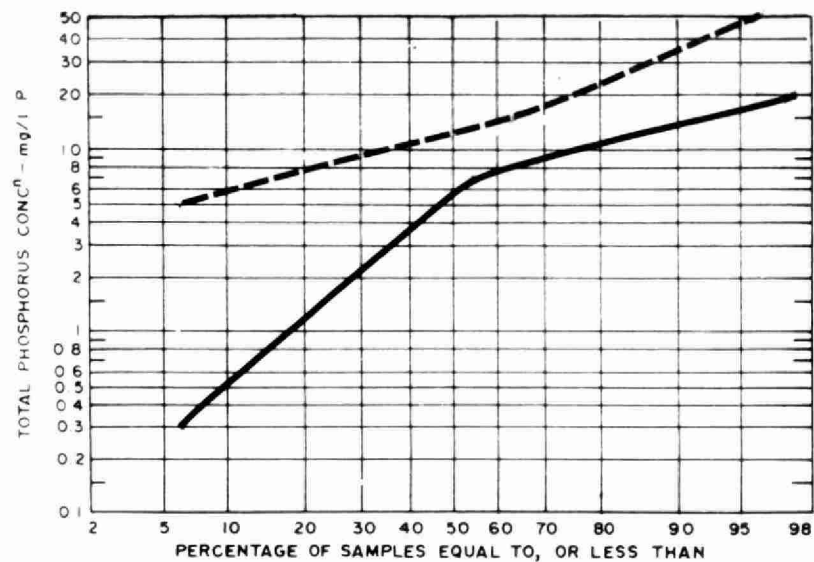


PLANT INFLUENT - - - - -

PLANT EFFLUENT —————



PHOSPHORUS

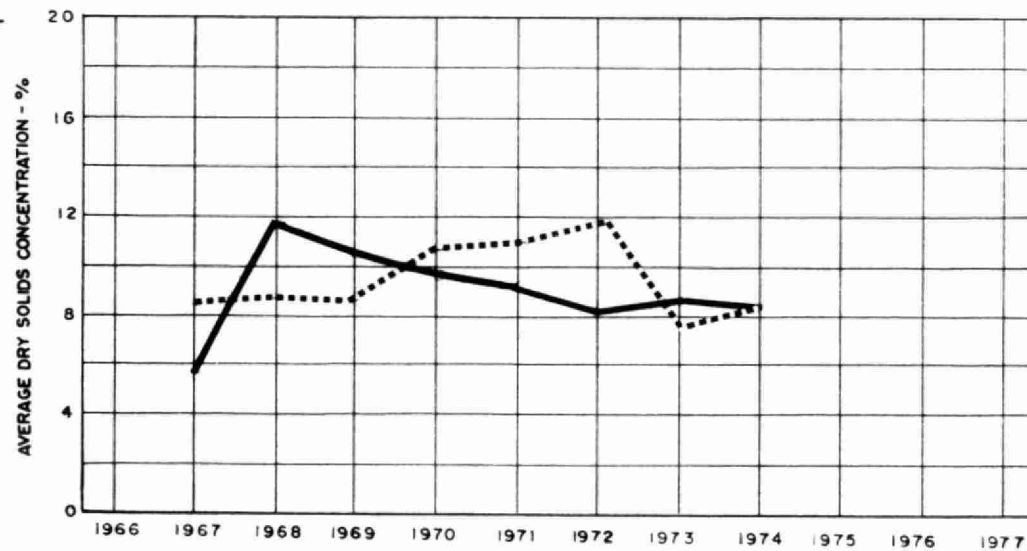


PLANT INFLUENT - - - - -

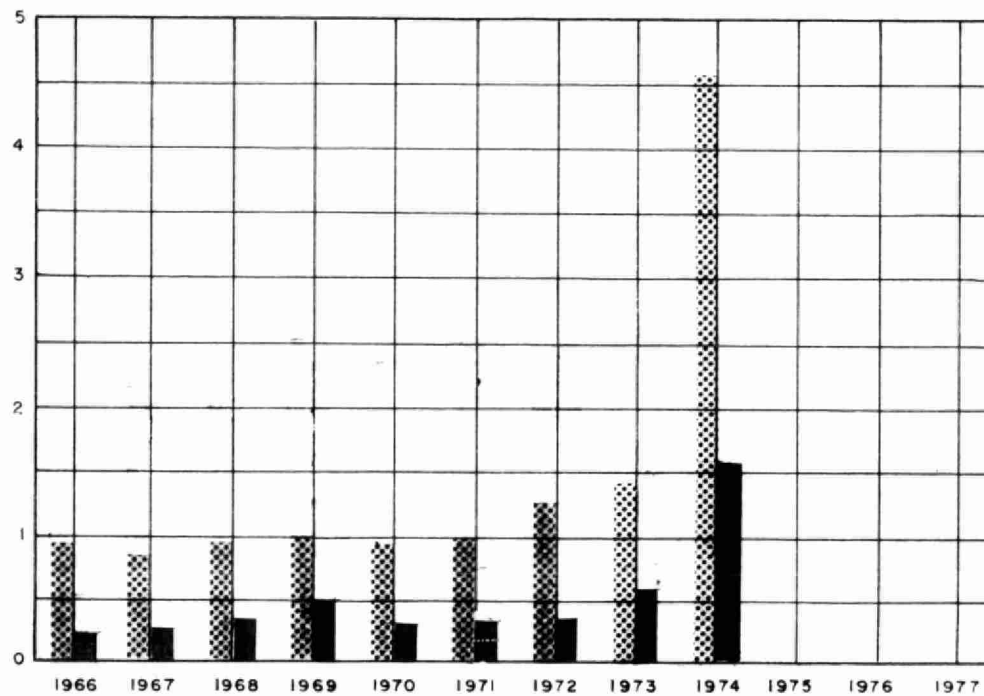
PLANT EFFLUENT —————

DIGESTION

RAW SLUDGE
DIGESTED SLUDGE ———



QUANTITY OF SLUDGE - 10⁶ gallons



RAW SLUDGE TO DIGESTER ▨
DIGESTED SLUDGE REMOVED ■

TREATMENT DATA

MONTH	GRIT QUANTITY REMOVED cubic feet	CHLORINATION		SLUDGE DIGESTION and DISPOSAL							
		CHLORINE USED 10 ³ pounds	AVERAGE DOSAGE mg/l	RAW SLUDGE			DIGESTED SLUDGE			SUPERNATANT	SLUDGE HAULED cubic yards
				QUANTITY 10 ³ gallons	TOTAL SOLIDS %	VOLATILE SOLIDS %	QUANTITY REMOVED 10 ³ gallons	TOTAL SOLIDS %	VOLATILE SOLIDS %	TOTAL SOLIDS %	
JAN	33	2.4	4.8	1.4			.42	8.5		.3	252
FEB	28	2.0	4.2	2.0	10.3	36	.35	9.7			210
MAR	120	2.6	4.1	2.6	9.8	32	.50	8.8			294
APR	209	2.5	3.8	5.3			2.29	9.0			1360
MAY	84	2.2	3.8	2.2	11.7	28	.64	8.4			378
JUNE	83	2.0	4.2	9.1	7.1	28	.55	8.5	27	7.7	327
JULY	102	2.0	4.6	6.1	7.9	26	2.79	9.0	24	.3	1656
AUG	206	2.1	4.5	3.6	8.7		1.44	9.5		4.0	854
SEPT	156	2.2	4.6	4.5	7.8	19	2.48	8.9		5.3	1476
OCT	99	2.2	4.6	2.0	7.0	33	1.39	7.8	23	1.5	825
NOV	36	2.0	4.2	4.7	7.1	25	2.35	6.8	22	2.0	1399
DEC	28	1.9	4.3	2.4	6.6	41	1.49	5.9	25	.9	882
TOTAL	1184	26.1	—	45.9	—	—	16.69	—	—	—	9913
AVG.	1.9 cubic feet/mil gal	2.2	4.1	3.8	8.4	30	1.38	8.4	24	2.8	826

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